



# Black-backed Woodpecker

*Picoides arcticus*

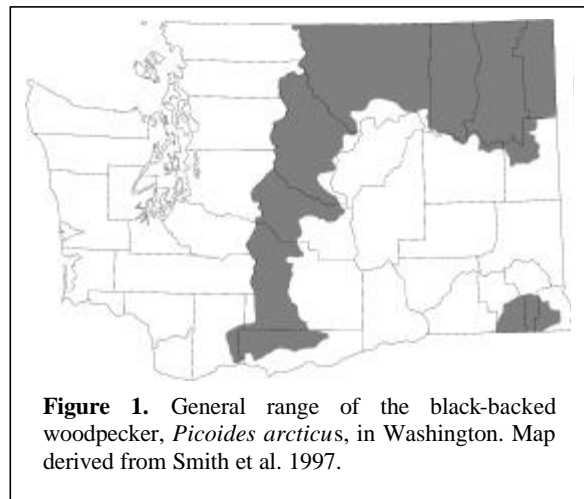
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## GENERAL RANGE AND WASHINGTON DISTRIBUTION

The black-backed woodpecker inhabits the boreal forests of North America, including the Cascade Mountains, the northern portions of the Sierra Nevada and Rocky Mountains, much of Canada, southeastern Alaska, northern New England, and the upper Midwest

In Washington, this woodpecker is found on the eastern slopes of the Cascade Mountains and in the coniferous forests of the Okanogan Highland, Selkirk and the Blue Mountains (see Figure 1; Smith et al. 1997).



## RATIONALE

The black-backed woodpecker is a State Candidate species and is in danger of population decline through loss of breeding and foraging habitat.

## HABITAT REQUIREMENTS

Black-backed woodpeckers primarily inhabit standing dead lodgepole pine (*Pinus contorta*), ponderosa pine (*Pinus ponderosa*), western larch (*Larix occidentalis*) and mixed coniferous forests (Dixon and Saab 2000, Kotliar et al. 2002). This species' dependence on burned forests and forests that have undergone other types of large-scale disturbances (e.g., insect infestation, blowdowns) is well documented (Hutto 1995, Caton 1996, Kreisel and Stein 1999, Dixon and Saab 2000, Kotliar et al. 2002). They have a scattered distribution with populations responding to prey abundance (Caton 1996). Disturbed forests are attractive to the black-backed woodpecker because they feed on insects (mainly larvae of wood-boring beetles) that are particularly abundant following a disturbance event. In northeast Washington, black-backed woodpeckers were 20 times more abundant in burned versus unburned forests (Kreisel and Stein 1999), and often were restricted to standing dead forests created by recent stand-replacement fires

(Hutto 1995, Caton 1996). Home ranges in mature and old-growth forests of central Oregon ranged between 59 and 193 ha (147 and 478 ac; Goggans et al. 1988).

## Nesting

In mature ponderosa pine and mixed conifer forests, black-backed woodpeckers nest predominantly in ponderosa and lodgepole pine (Bull et al. 1986). However, tree species composition varies regionally (Dixon and Saab 2000) and appears not to be as important a factor as forest condition (e.g., burned, insect damaged) for explaining the presence of nesting birds. This species nests in taller, small diameter, recently dead trees (>15 m [50 feet] in height, <50 cm [20 inches] in diameter-at-breast-height [dbh], and dead for five years or less) (Raphael and White 1984, Bull et al. 1986). They excavate nest cavities in live trees and hard snags (Spring 1965, Raphael and White 1984, Saab and Dudley 1997). Black-backed woodpeckers were commonly found in unlogged ponderosa pine/Douglas-fir forests with a high density of relatively small, hard snags (Saab and Dudley 1997). Johnsgard (1986) found black-backed woodpeckers nesting in similar habitat as the three-toed woodpecker (*Picoides tridactylus*).

In central Oregon's mixed conifer and lodgepole pine forests, black-backed woodpeckers selected mature and old-growth stands, and nested exclusively in lodgepole pine (Goggans et al. 1988). They avoided young stands and logged areas for both nesting and feeding. Live trees and snags used for nesting had heartrot and a mean dbh of 28 cm (11 in). However, it should be noted that lodgepole pine-dominated forests, such as the forests examined in the central Oregon research, are uncommon in Washington (J. Buchanan, personal communication).

## Feeding

In northeastern Oregon, black-backed woodpeckers foraged in both live and dead trees, and showed a preference for ponderosa pine (Bull et al. 1986). During winter months, black-backed woodpeckers foraged almost entirely upon standing dead trees, and preferred western larch within burned forests of northeast Washington (Kreisel and Stein 1999). The larvae of wood-boring beetles such as the pine beetle (*Dendroctonus* spp.) constituted most of their diet (Goggans et al. 1988, Dixon and Saab 2000). Trees used for foraging averaged 19 m (62 ft) in height with a dbh of 34 cm (13 in) and had been dead less than 2 years (Bull et al. 1986). Black-backed woodpeckers most often used the trunk as foraging substrate (Raphael and White 1984, Villard 1994). They frequently obtained insects by chipping bark from dead and dying trees (Short 1974, Kreisel and Stein 1999), but also excavated into the wood of tree trunks and logs in search of insect larvae (Raphael and White 1984, Villard 1994).

## Roosting

In Oregon's mixed conifer and lodgepole pine forests, black-backed Woodpeckers roosted mainly in cankers, trunk scars, mistletoe clumps or directly on pine trunks (Goggans et al. 1988). They chose mature and old-growth forests with an average canopy closure of 40%. Trees used for roosting averaged 28 cm (11 in) in diameter and 20 m (65 ft) in height. Studies examining roosting patterns in habitat-types more closely associated with the Washington landscape are lacking.

## LIMITING FACTORS

The availability of burned areas that are not subjected to salvage logging, and of insect-damaged forests with numerous snags, limits the distribution of the black-backed woodpecker (Kotliar et al. 2002). Hutto (1995) found that this species is highly restricted to early post-fire conditions that become less suitable 5 to 6 years after a fire due to declining prey availability. Historical and recent fire management policies have negatively impacted this species by reducing the chance of large, high intensity wildfires that create suitable conditions for the black-backed woodpecker (Dixon and Saab 2000).

## MANAGEMENT RECOMMENDATIONS

Suitable mature, old-growth and recently dead lodgepole pine, ponderosa pine and pine-dominated mixed coniferous forest stands that have experienced recent pine beetle infestation, large blowdowns or fire are important for the black-backed woodpecker (Dixon and Saab 2000). A recent review of studies in the western United States on post-fire salvage logging documented the serious negative impacts of this activity to the viability of black-backed woodpeckers (Kotliar et al. 2002). The review concluded that this species rarely used even partially-logged post-fire forests. Therefore, where salvage logging is planned, it is important to delay any work for the first five years after the disturbance event (Hutto 1995, Dixon and Saab 2000). This span is critical in providing habitat because the woodpecker's primary food source (wood-boring beetles) becomes less abundant after this period (Caton 1996). Salvage operations should also retain >104-123 snags/ha (>42-50 snags/ac) that are >23 cm dbh (>9 in dbh) (Dixon and Saab 2000, Wisdom et al. 2000).

Goggans et al. (1988) suggested that the traditional approach of managing cavity nesters by retaining a relatively small number of snags and green replacement trees in harvested stands may not maintain enough foraging substrate to sustain viable black-backed woodpecker populations. Instead, this specialized species may require larger areas of decaying, multi-layered older forests. They proposed that Woodpecker Management Areas (WMAs) be identified and withdrawn from commercial or salvage forestry and placed under special management to promote mature and old-growth conditions (Goggans et al. 1988). They suggest that WMAs should each encompass at least 387 ha (956 ac) of pine-dominated, mixed-conifer forest in mature or old-growth condition. This area is estimated based on average home-range sizes for nesting pairs during periods of abundant food. The researchers also recommended that WMAs be located below 1,372 m (4,500 ft) because this species is better adapted to conditions at lower elevations.

Goggans et al. (1988) recommended using the black-backed woodpecker rather than the three-toed woodpecker (*Picoides tridactylus*) as a management indicator species for mature and old-growth lodgepole pine forests. Black-backed woodpeckers are a better indicator species because they use a wider elevation range and are easier to monitor.

Woodpeckers and other insectivores play an important role in naturally reducing insect populations. Management to increase woodpecker populations should have the secondary benefit of increasing other insectivorous birds (Takekawa et al. 1982).

If pesticide or herbicide use is planned in areas inhabited by black-backed woodpeckers, refer to Appendix A, which lists contacts for assessing the use of pesticides, herbicides and other alternatives.

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## PERSONAL COMMUNICATIONS

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## KEY POINTS

### Habitat Requirements

- Inhabit mature and old-growth lodgepole pine, ponderosa pine, and mixed-conifer forests with numerous standing dead trees. Most abundant in burned and insect-infested stands.
- Forage on insects, mainly beetle larvae, in pole- and small sawtimber-sized snags.

### Management Recommendations

- Avoid salvage logging of suitable mature and old-growth lodgepole pine forest stands that have experienced pine beetle infestation or large blowdowns.
- Retain >104-123 snags/ha (>42-50 snags/ac) that are >23 cm dbh (>9 in dbh) where salvage logging is planned. It is important to delay any salvage operation for approximately five years in woodpecker habitat areas after a disturbance event.
- Establish Woodpecker Management Areas of at least 387 ha (956 ac) within managed forests. The areas should be in pine-dominated, mixed-conifer forest in mature or old-growth condition located below an elevation of 1,372 m (4,500 ft).
- Refer to Appendix A if pesticide or herbicide use is planned in areas inhabited by this species. This lists useful contact for assessing the use of pesticides, herbicides, and other alternatives.